N° 3575 A.D. 1904

Date of Application, 12th Feb., 1904

Complete Specification Left, 9th July, 1904—Accepted, 18th Aug., 1904

PROVISIONAL SPECIFICATION.

'Improvements in Anaesthetizing Apparatus'

I, Charles Stuart Birt, of 271 High Street, Selly Oak, in the County of Worcester, Chemist, do hereby declare the nature of my said invention to be as follows:—

My invention relates to improvements in apparatus for anaesthetizing and is particularly applicable for use either in addition to, or separately from, such apparatus now commonly used for dental and similar operations of a minor kind.

The well known and commonly used apparatus which dentists use consists of a breathing apparatus, an inhaler which fits onto the patients face connected to a gas bag in turn communicating with a cylinder of compressed nitrous oxide with suitable stop cocks and regulators. Now this anaesthetic produces an insensibility lasting about 20—40 seconds dependant on conditions and the patient, but the period of insensibility is nearer 20 seconds, and with the object of extending this period, more recently an anaesthetic composed of a mixture of methyl chloride, ethyl chloride, and methyl bromide is employed known as "saemoform" or other similar compound or mixture is sold in tubes, its volatility however is such that before the contents of the sealed tube can be properly projected into the inhaler they have frequently escaped.

The object of my invention is to ensure the full benefit of the anaesthetic being available from such sealed tubes, and as already stated my apparatus may be used in conjunction with the usual gas apparatus or be made separately.

In applying my invention to a gas apparatus of the usual type I employ the junction containing the face piece just as it is and make a tubular piece onto which the usual junction fits. My tubular piece connects in turn either to the usual gas bag connection or an air bag when used separately from a nitrous oxide apparatus. Soldered at a slight angle upwardly is a smaller side branch from my tubular part and this is arranged with a screw, push button or a pair of claws operated by turning a tap. Which ever of these devices is used it enters the main tube at the base of the branch junction, being operable from outside. The tube of liquid anaesthetic is placed in a spring metal sheath placed under the junction tube until its shoulder is held tightly by a rubber ring in the junction. Also inside my junction piece is a tray with a vertical metal framework extending above it with two cross bars around which from top to bottom is lapped a piece of lint, renewable for each patient operated upon. The bottom of the tray being wire gauze.

When the whole apparatus is fitted up and the face piece applied, the patient may then be allowed to establish proper breathing of air only by opening the air valve to the air bag or gas bag which is used full of air, and so be prepared for the anaesthetic. As soon as breathing is properly established my screw, press button or claws are operated and the drawn out end of the tube of anaesthetic thereby nipped off. The liquid being projected onto the lint,

[*Price 8d.*]

and as the patient inhales the air takes up the anaesthetic until sufficient anaesthesia is effected.

Dated this 11th day of February 1904.

CHARLES STUART BIRT.
By George Barker,
Fellow of the Chartered Institute of Patent Agents,
77 Colmore Row, Birmingham, Agent for Applicant.

COMPLETE SPECIFICATION.

"Improvements in Anaesthetizing Apparatus".

I, Charles Stuart Birt, of 271 High Street, Selly Oak, in the County of Worcester, Chemist, do hereby declare the nature of my said invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to improvements in apparatus for anaesthetizing and is particularly applicable for use either in addition to or separately from such apparatus now commonly used for dental and similar operations of a minor kind.

The well known and commonly used apparatus which dentists use consists of a breathing apparatus, an inhaler which fits onto the patient's face connected to a gas bag in turn communicating with a cylinder of compressed nitrous oxide with suitable stop cocks and regulators. Now this anaesthetic produces an insensibility lasting about 20—40 seconds dependant on conditions and the patient, but the period of insensibility is nearer 20 seconds, and with the object of extending this period more recently an anaesthetic composed of a mixture of methyl chloride, ethyl chloride, and methyl bromide is employed known as "saemoform" or other similar compound or mixture is sold in tubes, its volatility however is such that before the contents of the sealed tube can be properly projected into the inhaler they have frequently escaped.

The object of my invention is to ensure the full benefit of the anaesthetic being available from such sealed tubes, and as already stated my apparatus may be used in conjunction with the usual gas apparatus or be made separately.

In applying my invention to a gas apparatus of the usual type I employ the junction containing the face piece just as it is and make a tubular piece onto which the usual junction fits, My tubular piece connects in turn either to the usual gas bag connection or an air bag when used separately from a nitrous oxide apparatus. Soldered at a slight angle upwardly is a smaller side branch from my tubular part and this is arranged with a screw, push button or a pair of claws operated by turning a tap whichever of these devices is used it enters the main tube at the base of the branch junction, being operable from outside. The tube of liquid anaesthetic is placed in a spring metal sheath placed down the junction tube until its shoulder is held tightly by a rubber ring in the junction. Also inside my junction piece is a tray with a vertical metal framework extending above it with two cross bars around which from top to bottom is lapped a piece of lint, renewable for each patient operated upon,—The bottom of the tray being wire gauze.

When the whole apparatus is fitted up and the face piece applied, the patient may then be allowed to establish proper breathing of air only, by opening the air valve to the air bag or gas bag which is used full of air, and so be prepared for the anaesthetic. As soon as breathing is properly established my screw, press button or claws are operated and the drawn out end of the tube of anaesthetic thereby nipped off. The liquid being projected onto the lint, and as the patient inhales the air takes up the anaesthetic until sufficient anaesthesia is effected.

Or instead of the air valve to the air bag I may use a telescopic shutter or cock to open and close to the open air or to the gas or air bag.

In order to facilitate conception of my invention, and enable same to be carried into practice more easily, I have appended here unto two sheets of drawings:—

Figure 1: is side, part sectional elevation of my anaesthetizing attachment, the telescopic two way valve being also shown.

Figure 2: is a plan of same.

Figure 3: is a back external elevation of my attachment, a tube of anaesthetic being in position for use.

Figure 4: is the tray and frame which supports the lint or other absorbent.

Figure 5: is a plan of the same, the wire gauze tray being seen.

Figure 6: shows the spring metal sheath. A small tube of somnoform being inserted.

In carrying out my invention I make a tubular metal attachment A with a branch tube B of smaller diameter soldered or brazed into the side of the larger tube at an angle of about 20° and open at its upper end, which is provided with a spring lid b^2 for closing. The upper end of the tubular part A is of such a size as to suit most face piece attachments on the market, either directly or the telescopic valve C may be interposed onto the open end c^2 on which the face piece or mask may be placed. From Figures 1 and 2, it will be seen that by moving the peg c^3 fixed in the tubular slide c^4 against the action of the return spring c^5, the opening c^6 to air may be uncovered whilst the opening c^7 to the tube A is closed, the peg being turned into the bayonet catch c^8 until required to be returned to former position. Of course it will be understood that any other form of valve might be used such as the 2 or 3 ways cocks now in use.

At the base of the branch tube B a pivotted fork or loop b^3 enters having a milled nut b^4 attached externally with return spring b^5, so that after the tube D of liquid anaesthetic such as somnoform has been inserted into the spring tubular sheath E until its shouldered or drawn out nipple beds in the pad e^2 of rubber or the like, and this sheath E has been placed into the side tube B, the nipple of the tube passes between the forks and is ready for nipping off by simply twisting the milled nut b^4 the end of the nipple is broken off and the anaesthetic squirts onto the absorbent.

The absorbent such as lint F is wound upon a wire framing G supported from a tray H having a gauze bottom h^2 for catching any broken splints of glass from the nipple, the whole is secured in the lower end of the tubular attachment A by a bayonet joint as shown in Figure 1. a looped handle h^3 being provided.

The use of my anaesthetizing attachment is as follows:—The lower end of tube A containing tray H is attached to an air bag or to the usual gas bag and apparatus for supplying nitrous oxide. The upper end of A receives the face mask direct with usual two way cock, or my telescopic cock C and then the mask. The valve is open to air and closed to anaesthetizing attachment and the tube of anaesthetic is placed in position as shown in Figure 3. The mask is applied to patient and proper breathing of pure air established the valve to air is then closed simultaneously opening to tube A, the milled nut b^4 is then sharply twisted breaking off the nipple of the tube, the anaesthetic is absorbed by the absorbent F and anaesthezia of the patient take's place.

It will be understood that the liquid anaesthetic may be supplied from a reservoir or larger vessel in any quantity down the branch tube B on to the absorbent F, Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

In anaesthetizing apparatus for use with liquid anaesthetics, the use and construction of a tubular attachment A, having a branch tube B extending upwards at a slight angle away from the mask, with device at junction for instantly removing the nipple of a glass tube containing the anaesthetic which is received on an absorbent supported on a removeable frame up the lower end of the attachment, substantially as herein set forth and shown.

Dated this Eighth day of July, 1904.

CHARLES STUART BIRT,
By George Barker,
Fellow of the Chartered Institute of Patent Agents,
77 Colmore Row, Birmingham, Agent for Applicant.

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FIG 1

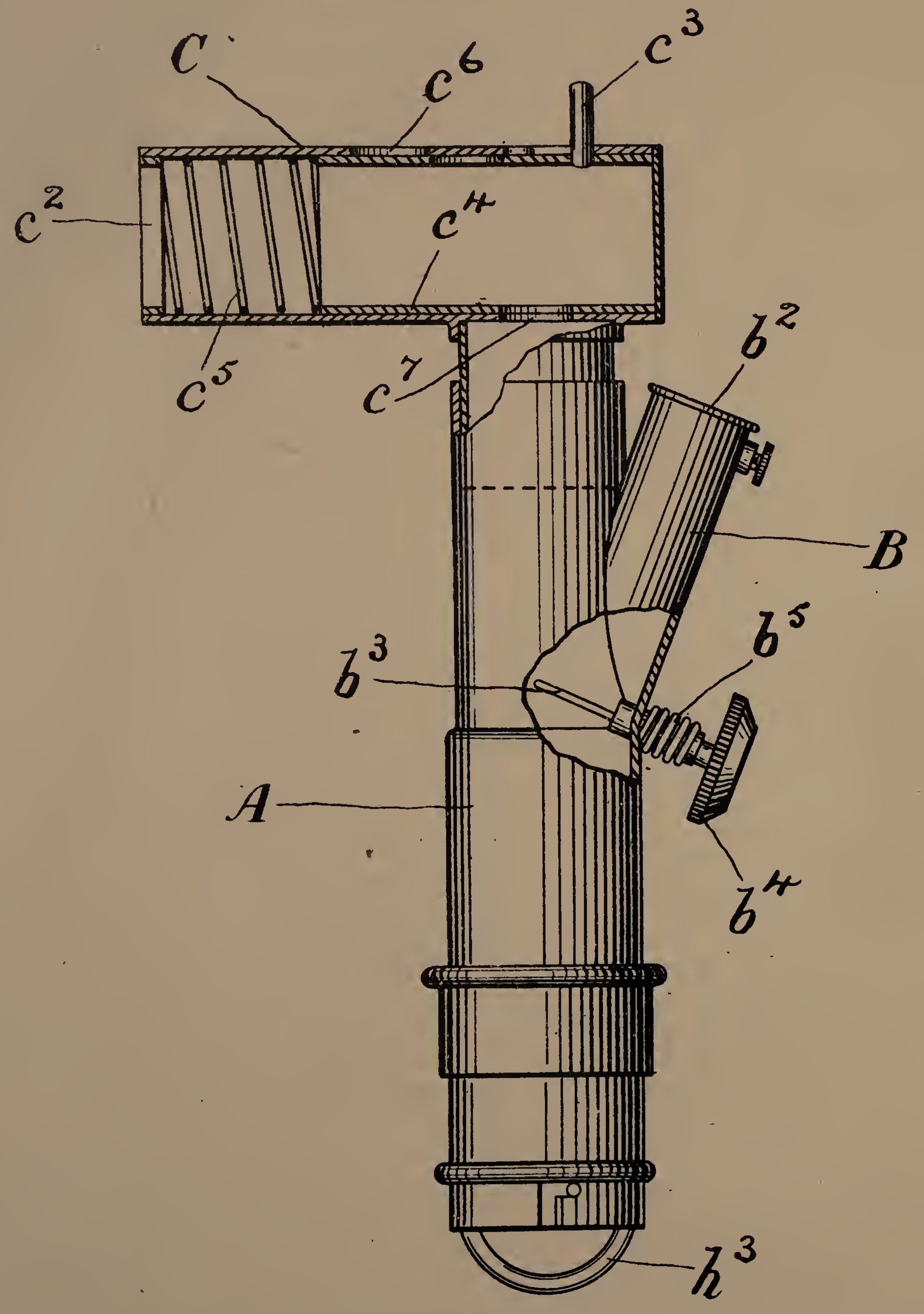


FIG. 2.

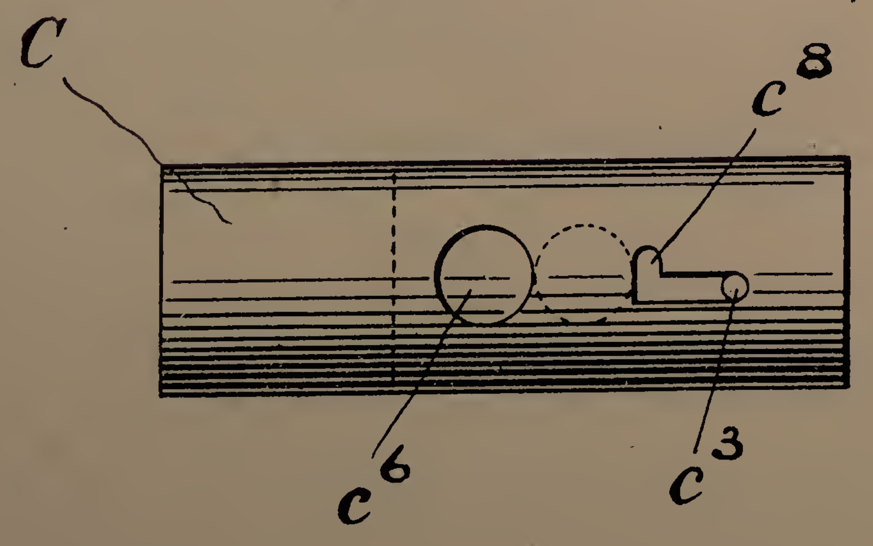


FIG. 3.

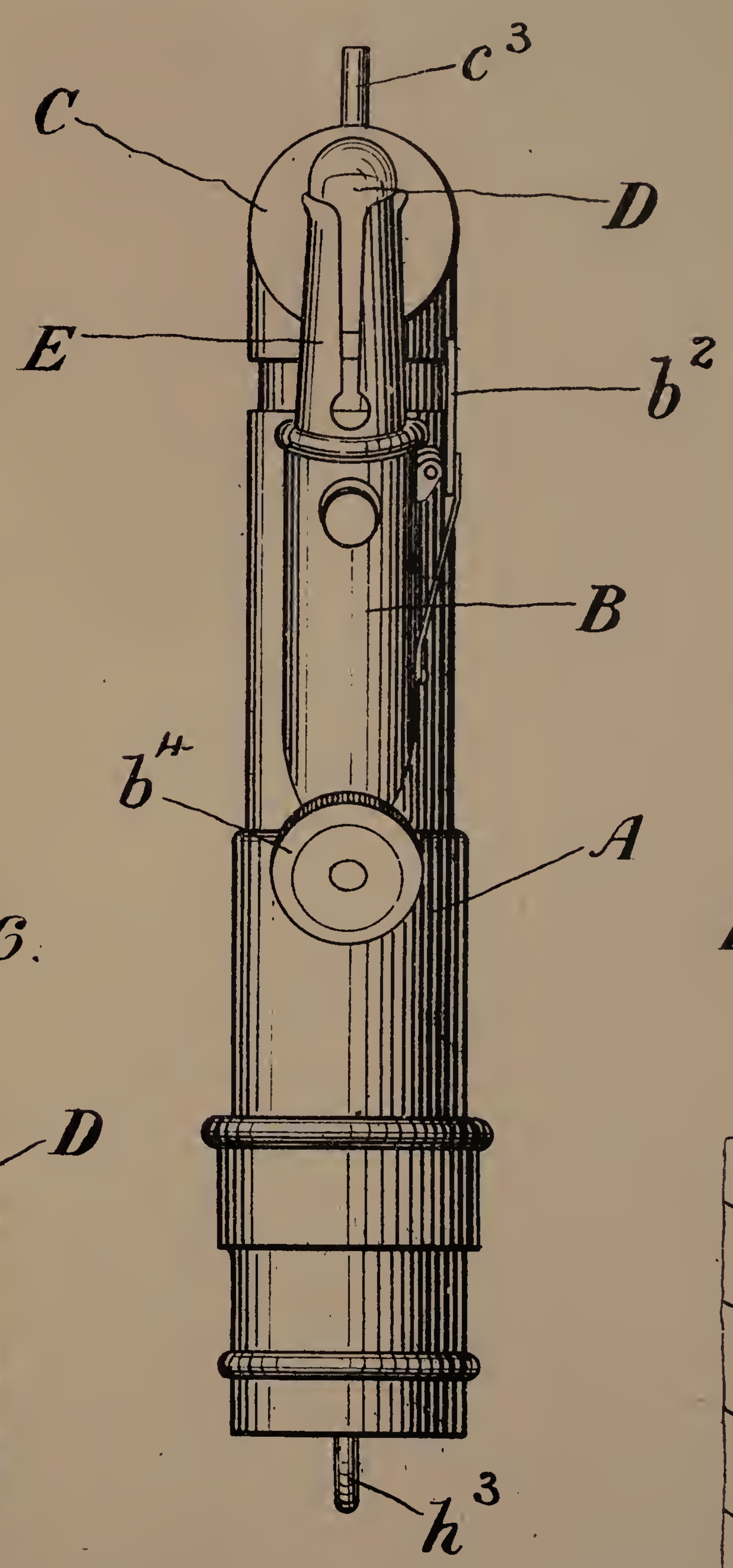


FIG. 6.

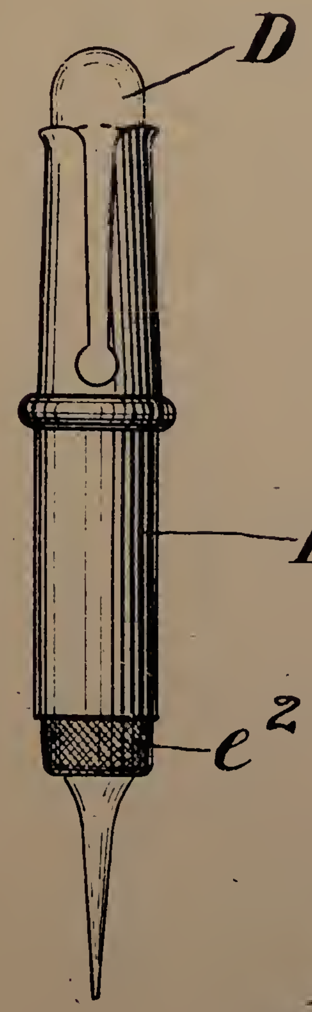


FIG. 5.

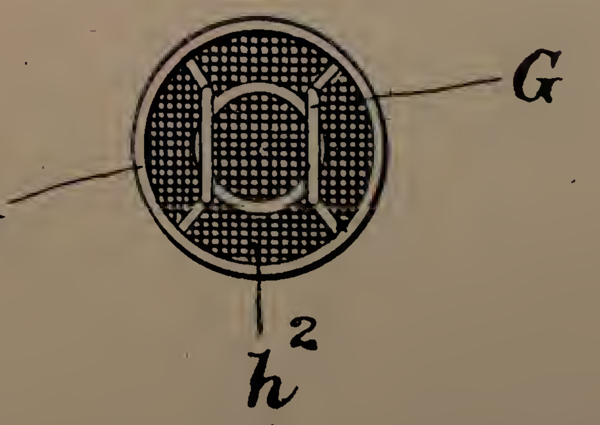
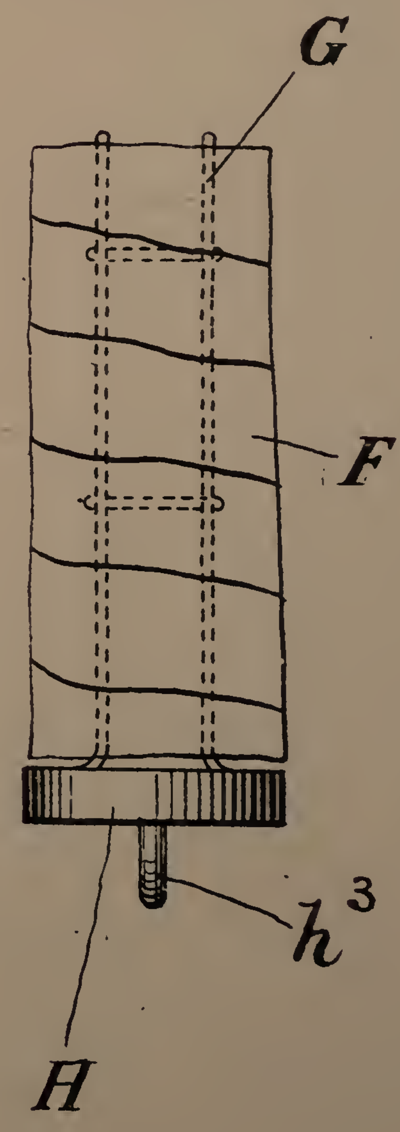


FIG. 4.



[This Drawing is a reproduction of the Original on a reduced scale.]

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